



6712-01

FEDERAL COMMUNICATIONS COMMISSION

47 CFR Part 25

IB Docket No. 07-101; FCC 13-1

Amendment of the Commission's Rules to Allocate Spectrum and Adopt Service Rules and Procedures to Govern the Use of Vehicle-Mounted Earth Stations in Certain Frequency Bands Allocated to the Fixed-Satellite Service

AGENCY: Federal Communications Commission.

ACTION: Final rule.

SUMMARY: In this document, the Federal Communications Commission (Commission) modifies its rules for Vehicle-Mounted Earth Stations (VMES) in order to promote greater flexibility for VMES operators, which, in turn, should enable the VMES industry to create more spectrally-efficient broadband solutions in the Ku-band without causing harmful interference to Fixed-Satellite Service (FSS) providers and without exposing the general public to harmful radiofrequency radiation.

DATES: Effective [INSERT DATE 30 DAYS AFTER PUBLICATION IN THE FEDERAL REGISTER].

FOR FURTHER INFORMATION CONTACT: Jennifer Balatan or Howard Griboff, Policy Division, International Bureau, (202) 418-1460.

SUPPLEMENTARY INFORMATION: This is a summary of the Commission's Order on Reconsideration, adopted on January 4, 2013, and released on January 8, 2013 (FCC 13-1). The full text of this document is available for inspection and copying during normal business hours in the Commission Reference Center, 445 12th Street, SW, Washington, DC 20554. The document

is also available for download over the Internet at

http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-13-1A1.doc. The complete text may also be purchased from the Commission's copy contractor, Best Copy and Printing, in person at 445 12th Street, SW, Room CY-B402, Washington, DC 20554, via telephone at (202) 488-5300, via facsimile at (202) 488-5563, or via e-mail at Commission@bcpiweb.com.

Summary of the Order on Reconsideration

On June 30, 2009, the Commission adopted the VMES Report and Order in IB Docket No. 07-101 (VMES Order) (74 FR 57092-01, November 4, 2009, as amended at 75 FR 1285-01, January 11, 2010), establishing licensing and service rules for VMES operating in the 14.0-14.5 GHz/11.7-12.2 GHz (Ku-band) frequencies. In this Order on Reconsideration (Reconsideration Order), the Commission addresses three issues raised by the Petitioners with respect the VMES rules that the Commission adopted in the VMES Order to protect Fixed-Satellite Service (FSS) providers from harmful interference and to protect the general public from exposure to harmful radiofrequency radiation. First, the Reconsideration Order eases the technical requirements for a certain type of VMES system – a variable power-density VMES system – including modifying the off-axis effective isotropically radiated power (EIRP)-density provisions in section 25.226(a)(3) to enable these systems to operate their terminals more efficiently and effectively. Specifically, the Reconsideration Order grants the Petitioners' requests to give variable power-density VMES systems ALSAT authority. The Reconsideration Order also permits variable power-density VMES systems to operate terminals with varying levels of power-densities by defining N equal to 1 for these systems in the off-axis EIRP-density limits. The Reconsideration Order declines the Petitioners' proposals to eliminate the requirement for variable power-density VMES systems to maintain power-density 1 dB below the off-axis EIRP-density limits. Rather

than eliminate the 1 dB requirement, the Reconsideration Order concludes that VMES applicants should request a waiver of the 1 dB requirement in order to allow those systems to improve spectral efficiency without compromising the FSS' protection. VMES applicants that seek a waiver of the 1 dB requirement must file a report regarding their system operations along with their waiver request. The Reconsideration Order also requires variable power-density VMES to cease or reduce transmissions if those VMES exceed the power-density limits for variable power-density systems. Second, the Reconsideration Order declines ViaSat's request to clarify the antenna pointing error provisions in the VMES rules. Third, the Reconsideration Order adopts ViaSat's proposal, in part, to relax the cessation of emission requirement in section 25.226(a)(9), a rule that is designed to minimize human exposure to radiofrequency radiation. The revisions should promote operational flexibility and spectral efficiency in the Ku-band. At the same time, these revisions should continue to ensure that the VMES operators protect the FSS operators from harmful interference and protect the general public from harmful exposure to radiofrequency radiation.

Final Regulatory Flexibility Certification – Reconsideration Order

The Regulatory Flexibility Act of 1980, as amended (RFA), requires that a regulatory flexibility analysis be prepared for notice-and-comment rule making proceedings, unless the agency certifies that “the rule will not, if promulgated, have a significant economic impact on a substantial number of small entities.” The RFA generally defines the term “small entity” as having the same meaning as the terms “small business,” “small organization,” and “small governmental jurisdiction.” In addition, the term “small business” has the same meaning as the term “small business concern” under the Small Business Act. A “small business concern” is one

which: (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the U.S. Small Business Administration (SBA).

In light of the rules adopted in the VMES Order, we find that there are only two categories of licensees that would be affected by the new rules. These categories of licensees are Satellite Telecommunications and Fixed-Satellite Transmit/Receive Earth Stations. The SBA has determined that the small business size standard for Satellite Telecommunications is a business that has \$15 million or less in average annual receipts. Commission records reveal that there are 20 space station licensees and operators in the Ku-band. We do not request or collect annual revenue information concerning such licensees and operators, and thus are unable to estimate the number of geostationary space station licensees and operators that would constitute a small business under the SBA definition cited above, or apply any rules providing special consideration for geostationary space station licensees and operators that are small businesses. Currently there are approximately 2,879 operational fixed-satellite transmit/received earth stations authorized for use in the Ku-band. The Commission does not request or collect annual revenue information, and thus is unable to estimate the number of earth stations that would constitute a small business under the SBA definition. Of the two classifications of licensees, we estimate that only 10 entities will provide VMES service. For the reasons described below, we certify that the policies and rules adopted in this Reconsideration Order will not have a significant economic impact on a substantial number of small entities.

In the VMES Order, the Commission adopted domestic U.S. allocation, service and licensing rules (VMES rules) that allow VMES to operate in the conventional and extended Ku-band frequencies while adhering to the Commission's two-degree satellite spacing interference avoidance requirements of the Ku-band FSS. The "conventional" Ku-band refers to frequencies

in the 11.7-12.2 GHz (downlink) and 14.0-14.5 GHz (uplink) bands and the covered “extended Ku-band” includes the 10.95-11.2 GHz and 11.45-11.7 GHz (downlink) bands. The VMES rules enable the VMES to operate as a primary application of the FSS in the conventional bands. In the extended band frequencies, VMES may be authorized to communicate with geostationary satellite orbit FSS space stations but must accept interference from stations of the Fixed Service (FS) operating in accordance with the Commission’s rules. The VMES rules promote spectrum sharing with certain secondary incumbent services in the uplink bands, including government space research service and radio astronomy service.

The Commission does not expect small entities to incur significant costs associated with the changes adopted in this Reconsideration Order. The changes will benefit both large and small entities by allowing greater operational flexibility in providing VMES service. We believe these requirements are nominal and do not impose a significant economic impact on small entities. Therefore, we certify that the requirements adopted in this Reconsideration Order will not have a significant economic impact on a substantial number of small entities.

Final Paperwork Reduction Act of 1995 Analysis – Reconsideration Order

This Reconsideration Order does not contain new or modified information collection requirements subject to the Paperwork Reduction Act of 1995 (PRA), Public Law 104-13. In addition, therefore, it does not contain any new or modified information collection burden for small business concerns with fewer than 25 employees, pursuant to the Small Business Paperwork Relief Act of 2002, Public Law 107-198, *see* 44 U.S.C. 3506(c)(4). The Commission will send a copy of this Reconsideration Order to Congress and the Government Accountability Office pursuant to the Congressional Review Act, *see* 5 U.S.C. 801(a)(1)(A).

Ordering Clauses

IT IS ORDERED that, pursuant to Sections 4(i), 7, 302, 303(c), 303(e), 303(f) and 303(r) of the Communications Act of 1934, as amended, [47 U.S.C. Sections 154\(i\), 157, 302, 303\(c\), 303\(e\), 303\(f\) and 303\(r\)](#), this Order on Reconsideration IS ADOPTED. Part 25 of the Commission's Rules IS AMENDED **[INSERT DATE 30 DAYS AFTER PUBLICATION IN THE FEDERAL REGISTER]**.

IT IS FURTHER ORDERED that the Petition for Reconsideration filed by The Boeing Company IS GRANTED in part to the extent described above and IS DENIED in all other respects.

IT IS FURTHER ORDERED that the Petition for Reconsideration filed by ViaSat, Inc. IS GRANTED in part to the extent described above and IS DENIED in all other respects.

IT IS FURTHER ORDERED that the Final Regulatory Flexibility Certification, as required by Section 604 of the Regulatory Flexibility Act, IS ADOPTED.

IT IS FURTHER ORDERED that the Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, SHALL SEND a copy of this Order on Reconsideration including the Final Regulatory Flexibility Certification, to the Chief Counsel for Advocacy of the Small Business Administration.

The Commission will send a copy of this Order on Reconsideration in a report to be sent to Congress and the Government Accountability Office pursuant to the Congressional Review Act, see 5 U.S.C. 801(a)(1)(A).

List of Subjects in 47 CFR Part 25

Satellites.

FEDERAL COMMUNICATIONS COMMISSION

Marlene Dortch,
Secretary.

Final Rules

For the reasons discussed above, the Federal Communications Commission amends 47 CFR part 25 as follows:

PART 25 – SATELLITE COMMUNICATIONS

1. The authority citation for part 25 continues to read as follows:

Authority: 47 U.S.C. 701-744. Interprets or applies Sections 4, 301, 302, 303, 307, 309 and 332 of the Communications Act, as amended, 47 U.S.C. Sections 154, 301, 302, 303, 307, 309, 332, unless otherwise noted.

2. Amend Section 25.226 as follows:

- a. Revise the introductory text of paragraphs (a)(1)(ii) and (iii);
- b. Revise paragraph (a)(3)(i);
- c. Remove paragraph (a)(3)(iii);
- d. Revise paragraph (a)(9);
- e. Revise paragraph (b)(3)(i);
- f. Remove paragraph (b)(3)(iii);
- g. Revise the last sentence of paragraph (b)(8); and
- h. Add paragraph (b)(9).

The revisions and addition read as follows:

§ 25.226 Blanket Licensing provisions for domestic, U.S. Vehicle-Mounted Earth Stations (VMESs) receiving in the 10.95-11.2 GHz (space-to-Earth), 11.45-11.7 GHz (space-to-Earth), and 11.7-12.2 GHz (space-to-Earth) frequency bands and transmitting in the 14.0-14.5 GHz (Earth-to-space) frequency band, operating with Geostationary Satellites in the Fixed-Satellite Service

(a) * * *

(1) * * *

(ii) Except for VMES systems operating under paragraph (a)(3), each VMES transmitter must meet one of the following antenna pointing error requirements:

* * * * *

(iii) Except for VMES systems operating under paragraph (a)(3), each VMES transmitter must meet one of the following cessation of emission requirements:

* * * * *

(3) * * *

(i) The effective aggregate EIRP-density from all terminals shall be at least 1 dB below the off-axis EIRP-density limits defined in paragraph (a)(1)(i) of this section, with the value of $N=1$. In this context the term “effective” means that the resultant co-polarized and cross-polarized EIRP-density experienced by any GSO or non-GSO satellite shall not exceed that produced by a single transmitter operating 1 dB below the limits defined in paragraph (a)(1)(i) of this section. The individual VMES transmitter shall automatically cease emissions within 100 milliseconds if the VMES transmitter exceeds the off-axis EIRP-density limits minus 1 dB specified above. If one or more VMES transmitters causes the aggregate off-axis EIRP-densities to exceed the off-axis EIRP-density limits minus 1 dB specified above, then the transmitter or transmitters shall cease or reduce emissions within 100 milliseconds of receiving a command from the system's network control and monitoring center. A VMES system operating under this subsection shall provide a detailed demonstration as described in paragraph (b)(3)(i) of this section.

* * * * *

(9) Each VMES terminal shall automatically cease transmitting upon the loss of synchronization or within 5 seconds upon loss of reception of the satellite downlink signal, whichever is the shorter timeframe.

(b) * * *

(3) * * *

(i) The applicant shall make a detailed showing of the measures it intends to employ to maintain the effective aggregate EIRP-density from all simultaneously transmitting co-frequency terminals operating with the same satellite transponder at least 1 dB below the off-axis EIRP-density limits defined in paragraphs

(a)(1)(i)(A) through (C) of this section. In this context the term “effective” means that the resultant co-polarized and cross-polarized EIRP-density experienced by any GSO or non-GSO satellite shall not exceed that produced by a single VMES transmitter operating at 1 dB below the limits defined in paragraphs (a)(1)(i)(A) through (C) of this section. The applicant also must demonstrate that an individual transmitter and the entire VMES system is capable of automatically ceasing emissions within 100 milliseconds if the aggregate off-axis EIRP-densities exceed the off-axis EIRP-density limits minus 1 dB, as set forth in paragraph (a)(3)(i) of this section. The International Bureau will place this showing on public notice along with the application.

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(8) * * *. All VMES applicants shall demonstrate that their VMES terminals are capable of automatically ceasing transmissions upon the loss of synchronization or within 5

seconds upon loss of reception of the satellite downlink signal, whichever is the shorter timeframe.

(9) Except for VMES systems operating pursuant to paragraphs (a)(2) and (a)(3)(ii) of this section, VMES systems authorized pursuant to this section shall be eligible for a license that lists ALSAT as an authorized point of communication.

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